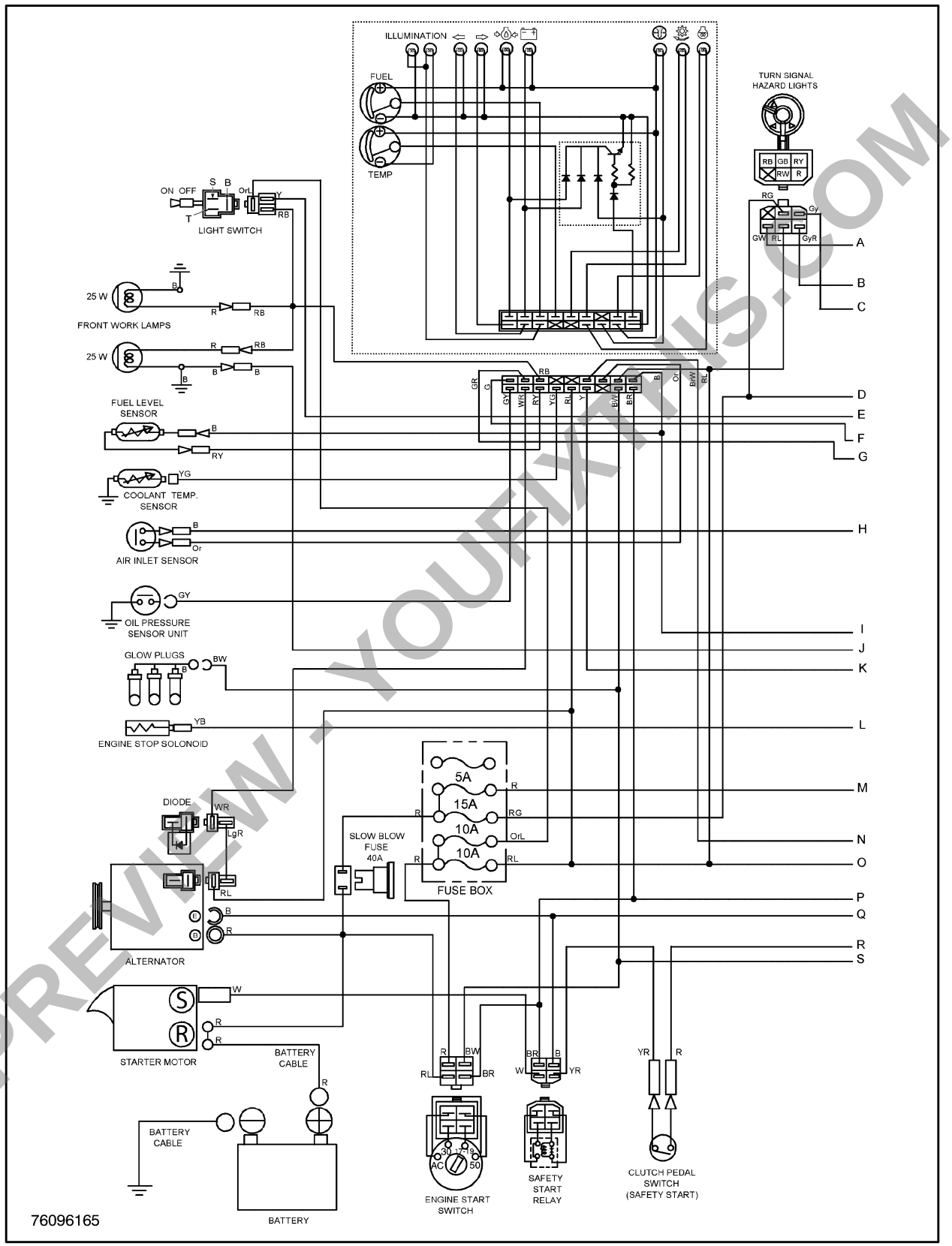
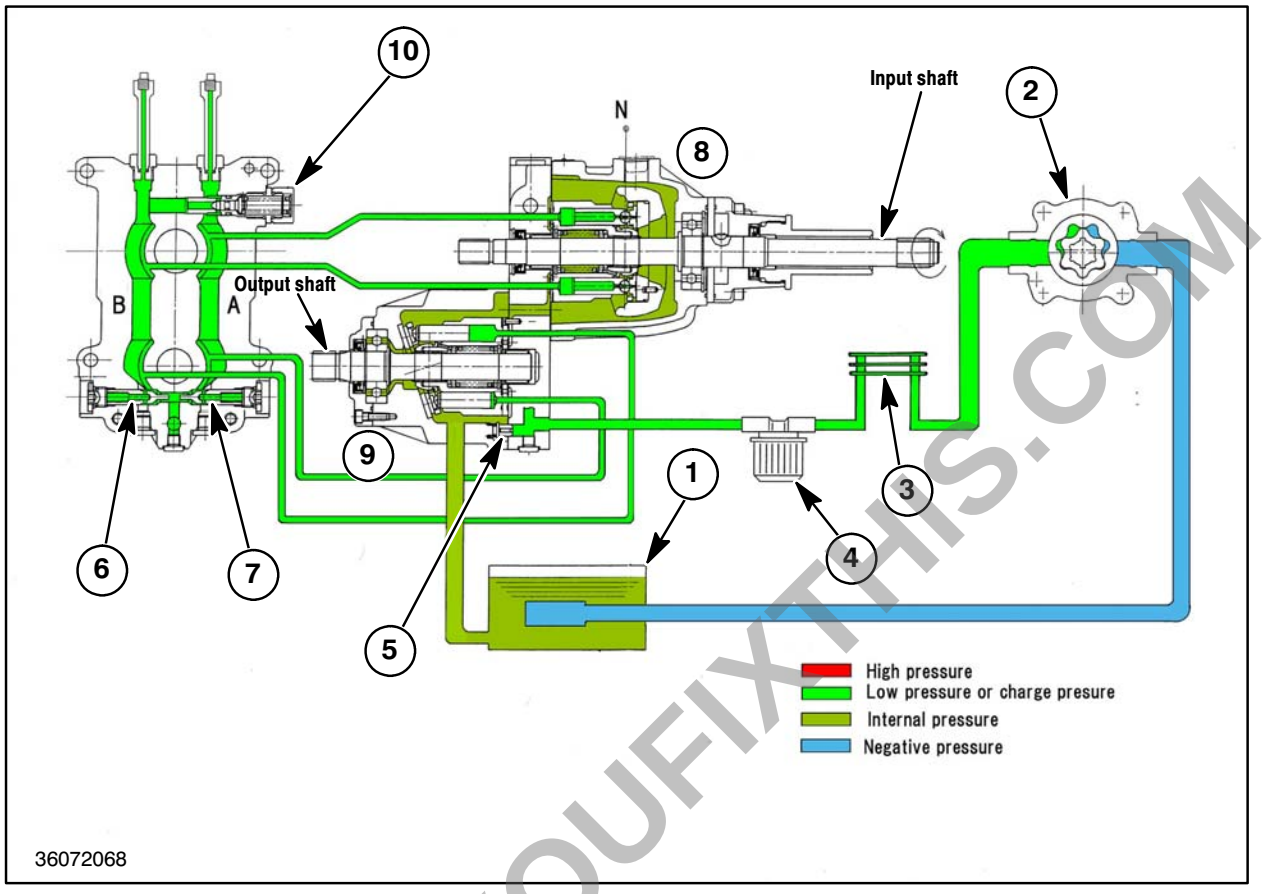
COMPLETE ELECTRICAL WIRING DIAGRAM - T1520 PRIOR TO SERIAL NUMBERS Z8NGK1151 AND Z8NGL1146



1

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FLUID FLOW NEUTRAL POSITION

1. Reservoir
2. Charge Pump
3. Cooler
4. Filter (HST)
5. Charge Pump Relief Valve
6. Feed (Check) Valve “A”
7. Feed (Check) Valve “B”
8. Hydrostatic Pump
9. Hydrostatic Motor
10. High Pressure Relief

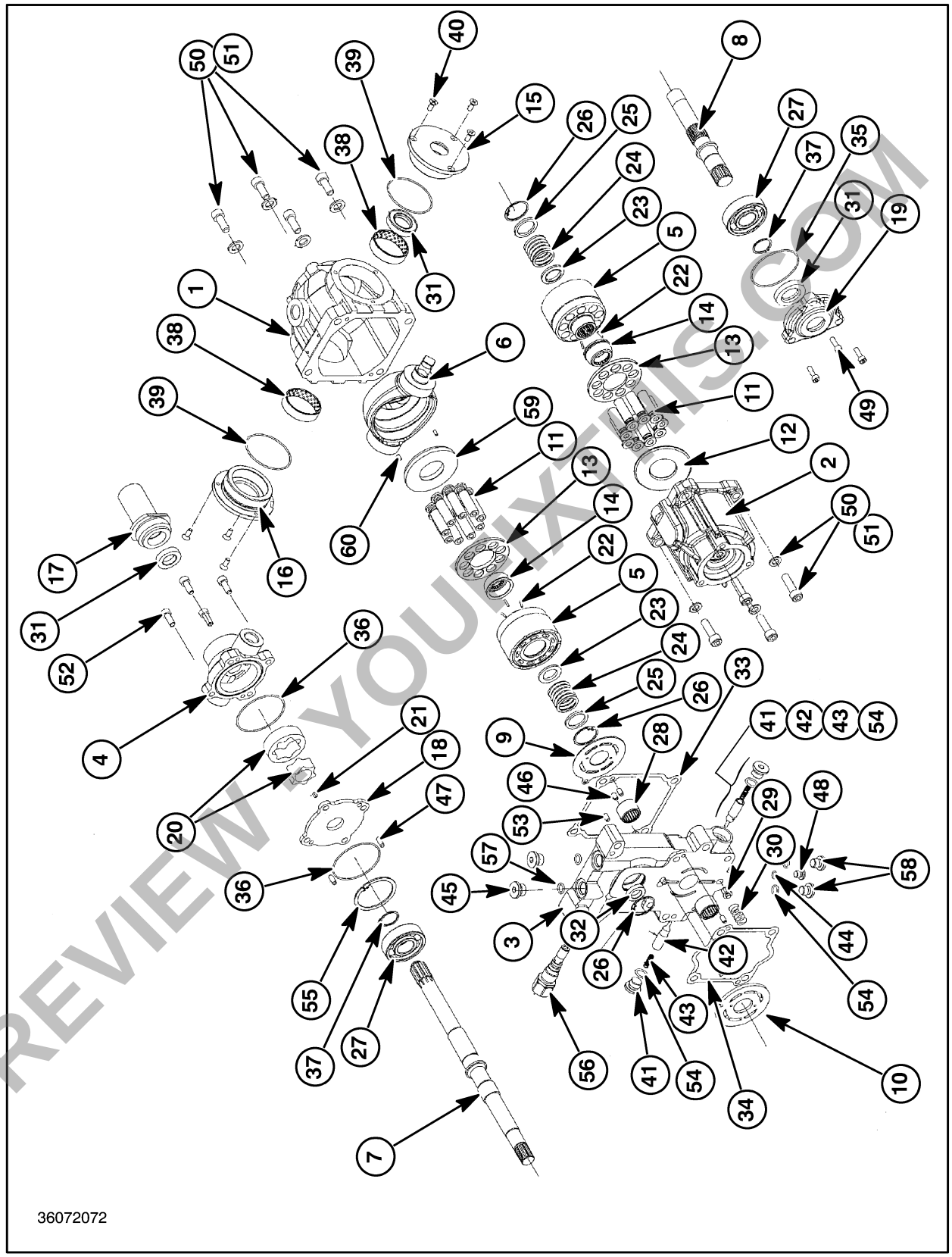
FLUID FLOW

Neutral Position

Fluid drawn from the transmission reservoir, 1, is pressurized by the rotor type charge pump, 2. The fluid flows from the charge pump to the cooler, 3, and filter, 4, and returns to the sump via the charge pump relief valve, 5. The charge pump relief valve maintains 490 kPa (71 psi) pressure to the feed (check) valves, 6 and 7, at all times. Fluid flow past the feed (check) valves pressurizes the passages “A” and “B” and the pump and motor cylinder blocks. Because of equal pressures in passages “A” and “B” the motor does not rotate. The valves, 6 and 7, are in a normally open position allowing fluid flow past the feed (check) valves, 6 and 7, to return to the sump. The feed (check) valves are set at 3433 – 3723 kPa (498 – 540 psi) and remain open until this pressure is exceeded.

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METRIC BOLT TORQUE SPECIFICATIONS

Bolt Size	Grade No.	Coarse Thread			Fine Thread		
		Pitch (mm)	Pound Foot	Newton Meters	Pitch (mm)	Pound Foot	Newton-Meters
M6	4T, 4.8	1.0	3.6 – 5.1	4.9 – 6.9	------	------	------
	7T, 8T, 8.8		6.1 – 8.3	8.3 – 11.3			
	10T, 11T		8.6 – 11.6	11.7 – 15.7			
M8	4T, 4.8	1.25	9.4 – 12.3	12.7 – 16.7	1.0	11.2 – 14.9	15.2 – 20.2
	7T, 8T, 8.8		16.7 – 21.0	22.6 – 28.4		19.6 – 25.3	26.5 – 34.3
	10T, 11T		21.0 – 26.8	28.5 – 36.3		22.4 – 29.7	30.4 – 40.2
M10	4T, 4.8	1.5	18.8 – 24.6	25.5 – 33.3	1.25	21.0 – 26.8	28.5 – 36.3
	7T, 8T, 8.8		32.5 – 41.3	44.1 – 55.9		36.2 – 46.3	49.0 – 62.8
	10T, 11T		39.8 – 51.3	54.0 – 69.6		42.7 – 54.2	57.9 – 73.5
M12	4T, 4.8	1.75	27.5 – 34.8	37.3 – 47.1	1.25	31.8 – 40.5	43.1 – 54.9
	7T, 8T, 8.8		48.5 – 61.5	65.7 – 83.3		54.9 – 69.4	74.5 – 94.1
	10T, 11T		68 – 85.6	92 – 116		73.1 – 93.7	99 – 127
M14	4T, 4.8	2.0	46.3 – 59.3	62.8 – 80.4	1.5	51.4 – 64.4	69.7 – 87.3
	7T, 8T, 8.8		76.8 – 97.4	104 – 132		85.6 – 109	116 – 148
	10T, 11T		102.6 – 129	139 – 175		110 – 136	149 – 185
M16	4T, 4.8	2.0	63.5 – 81.2	86 – 110	1.5	67.2 – 84.9	91 – 115
	7T, 8T, 8.8		110 – 136.5	149 – 185		116 – 142	157 – 193
	10T, 11T		151.3 – 188	205 – 255		162 – 199	220 – 270
M18	4T, 4.8	2.0	83.4 – 104	113 – 141	1.5	96.7 – 120	131 – 163
	7T, 8T, 8.8		145 – 174	196 – 236		169 – 206	230 – 280
	10T, 11T		203 – 246	275 – 333		220 – 270	299 – 367
M20	4T, 4.8	2.5	106 – 133	144 – 180	1.5	126 – 155	171 – 211
	7T, 8T, 8.8		177 – 214	240 – 290		203 – 245	275 – 333
	10T, 11T		268 – 252	363 – 441		293 – 358	397 – 485

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TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	CORRECTION
Engine does not develop full power	Clogged air cleaner	Inspect and replace air cleaner if necessary
	Fuel hose obstructed	Check for crimped fuel hose. Inspect fuel filter for cleanliness
	Improper nozzle injection pressure and angle	Inspect for proper injection pressure and angle
	Low cylinder compression	Check engine compression
	Insufficient fuel injection	Repair at authorized shop
	Improper valve lash adjustment	Adjust valves to correct tolerances
	Burned, worn or sticking valves	Inspect and replace as necessary
	Blown head gasket	Replace head gasket
	Worn or sticking piston rings	Overhaul as necessary
	Faulty engine stop solenoid	Replace stop solenoid
Low oil pressure	Engine oil level low	Fill to proper level
	Wrong grade of oil	Replace with correct grade oil
	Clogged oil pump filter	Change oil and filter
	Faulty oil pressure relief valve	Replace relief valve
	Worn oil pump drive shaft gears, or broken oil pipe	Inspect oil system and components. Replace defective components
	Excessive main or connecting rod bearing clearances	Replace bearings or shaft if necessary
	Oil pump axial clearance not properly set	Check pump clearance and shim as needed to proper tolerance
Engine will not stop	Faulty engine stop solenoid	Replace the stop solenoid
	Faulty starter switch	Replace starter switch

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SPECIFICATIONS

	Model T1520	Model T1510
ENGINE		
Type	Diesel	Diesel
Engine Gross Horsepower	26.0 kW (35.0 Hp)	22.4 kW (30.0 Hp)
Cylinders	3	3
Bore	84 mm (3.31 in)	84 mm (3.31 in)
Stroke	100 mm (3.94 in)	90 mm (3.54 in)
Displacement	1.662 L (101.4 in^3)	1.496 L (91.3 in^3)
Compression Ratio	22.5:1	22.2:1
Firing Order	1-2-3	1-2-3
Low Idle Speed	950 – 1050 rpm	950 – 1050 rpm
Maximum Speed:		
High Idle	2840 rpm	2825 rpm
Rated	2600 rpm	2600 rpm
Valve Clearance (Cold):		
Intake	0.20 mm (0.008 in)	0.20 mm (0.008 in)
Exhaust	0.20 mm (0.008 in)	0.20 mm (0.008 in)
CAPACITIES		
Fuel Tank	27.0 L/ 7.1 US gal	27.0 L/ 7.1 US gal
Cooling System	4.0 L/ 4.2 US qt	4.0 L/ 4.2 US qt
Engine Crankcase:		
With Filter	4.0 L/ 4.2 US qt	4.0 L/ 4.2 US qt
Rear Axle & Transmission (Includes Hydraulics)		
9x3 (Gear)	31.5 L/ 8.3 US gal	31.5 L/ 8.3 US gal
HST	31.5 L/ 8.3 US gal	31.5 L/ 8.3 US gal
Front Axle Final Reduction	0.8 L/ 0.85 US qt	0.8 L/ 0.85 US qt
Differential Gear Case	1.4 L/ 1.5 US qt	1.4 L/ 1.5 US qt

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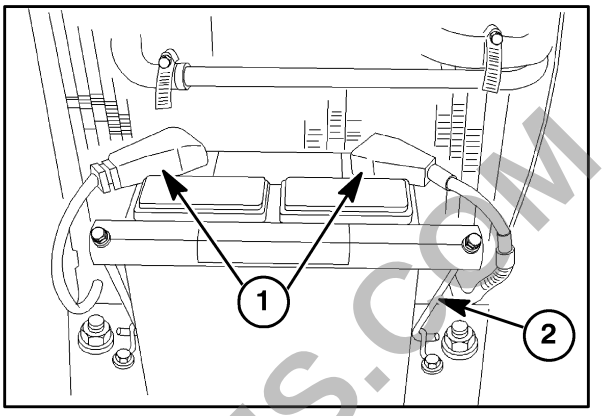
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OVERHAUL – ENGINE

ENGINE

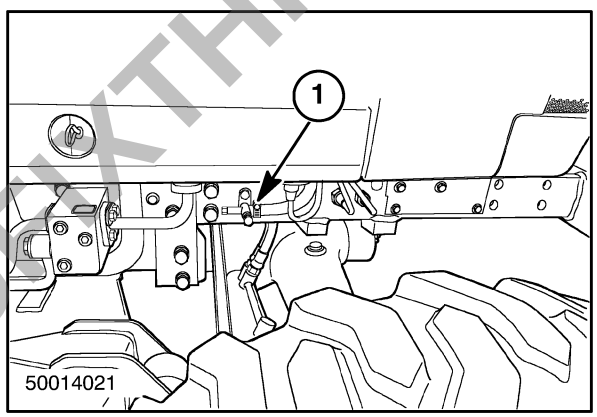
Preparation

1. Disconnect the battery leads, 1, and battery hold down bracket, 2, to remove the battery.
2. Remove tractor hood and side screen guards. See Section 90 for “Hood Removal” and “Side Screen Guard Removal”.



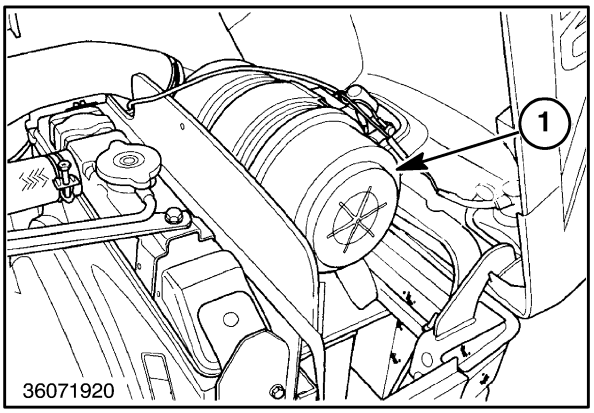
5

3. Turn coolant tap, 1, counterclockwise to drain fluid. Remove the radiator assembly. See “Radiator Removal”, discussed later in this section.



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4. Remove the air cleaner assembly, 1, along with the air cleaner hoses.



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LUBRICANTS

RECOMMENDED LUBRICANTS AND COOLANTS

Lubricant	Type and Description	Part Number	Container Size
Engine Oil	AMBRA SUPER GOLD SSL ENGINE OIL SAE 10W-40	86994335	9.46 L/2.5 US gal
	AMBRA SUPER GOLD HSP ENGINE OIL SAE 10W	86641050	18.93 L/5 US gal
	AMBRA SUPER GOLD HSP ENGINE OIL SAE 10W-30	9613313	0.946 L/1 US qt
		86641052	3.785 L/1 US gal
		9613314	9.46 L/2.5 US gal
		9673508DS	18.93 L/5 US gal
	AMBRA SUPER GOLD HSP ENGINE OIL SAE 30	9613286	0.946 L/1 US qt
		86641043	3.785 L/1 US gal
		9613289	9.46 L/2.5 US gal
		86641044	18.93 L/5 US gal
	AMBRA SUPER GOLD HSP ENGINE OIL SAE 40	9624812DS	228.2 L/55 US gal
	AMBRA SUPER GOLD HSP ENGINE OIL SAE 15W-40	86641081	0.946 L/1 US qt
		86641082	3.785 L/1 US gal
		86641084	9.46 L/2.5 US gal
		86641083	18.93 L/5 US gal
	AMBRA SUPER GOLD HSP ENGINE OIL SAE 20W-50	86994337	18.93 L/5 US gal
	AMBRA AUTO SUPREME SAE 5W-30	9673589DS	0.946 L/1 US qt
	AMBRA AUTO SUPREME SAE 10W-30	86641101	0.946 L/1 US qt
Transmission Oil	AMBRA MULTI TRAN	86639558	3.785 L/1 US gal
		86639559	9.46 L/2.5 US gal
		86639560	18.93 L/5 US gal
	F200 Cold Weather Use	86523625DS	3.785 L/1 US gal
		86523626DS	18.93 L/5 US gal
	AMBRA MULTI TRAN SSL	86994339	9.46 L/2.5 US gal
	AMBRA MULTI BIO S	86994341	9.46 L/2.5 US gal
Hydraulic Oil	AMBRA MULTI G 134	9624655DS	0.946 L/1 US qt
		9624656DS	3.785 L/1 US gal
		9624450	9.46 L/2.5 US gal
		9624451	18.93 L/5 US gal
	F200 Cold Weather Use	86523625DS	3.785 L/1 US gal
		86523626DS	18.93 L/5 US gal
	AMBRA HYDROSYSTEM 46 HYD FLUID	86109085	18.93 L/5 US gal
	AMBRA HYDROSYSTEM 68 HYD FLUID	86994331	18.93 L/5 US gal
	AMBRA HYDROSYSTEM 100 HYD FLUID	86994343	18.93 L/5 US gal
ATF Oil	AMBRA HYDRODEX 3 ATF	9613304	0.946 L/1 US qt
		9613312	9.46 L/2.5 US gal
Gear Oil	AMBRA HYPOIDE 90 GEAR LUBE	9613295	0.946 L/1 US qt
		9613294	9.46 L/2.5 US gal
		86994348	60.6 L/16 US gal
	AMBRA HYPOIDE 140 GEAR LUBE	87027134*	0.946 L/1 US qt
		87027135	9.46 L/2.5 US gal
		86994351	60.6 L/16 US gal
	AMBRA TRANSAXLE FLUID	86994352	18.93 L/5 US gal
	AMBRA HYPOIDE SSL GEAR LUBE	86994354	0.946 L/1 US qt
Grease	AMBRA GR-9 MULTI-PURPOSE GREASE	9613310	TUBE – 14 OZ.
	AMBRA HI-TEMP GREASE	9861804DS	TUBE – 14 OZ.
	AMBRA CORN HEAD GREASE	94107DS	TUBE – 14 OZ.
	AMBRA GR 75 MD GREASE	87400001	TUBE – 14 OZ.
	AMBRA GR 1000 SYNTHETIC GREASE	86994355	TUBE – 14 OZ.
	LIMITED SLIP ADDITIVE	B96606	
Brake Fluid	BRAKE LHM FLUID (Mineral Based Oil)	86541699DS	0.946 L/1 US qt
Coolant	ESE-M97B18-D, Ethylene Glycol Coolant Concentrate	FGCC2701DS	3.785 L/1 US gal
	Propylene Glycol Concentrate	FGCC2711DS	3.785 L/1 US gal

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MAINTENANCE

⚠ WARNING ⚠

Hot coolant can spray out, if the radiator cap is removed while system is hot. Scalding can result from fast removal of the cap. Check and service cooling system according to maintenance instructions. To remove radiator cap, let system cool, turn to first notch, then wait until all pressure is released. Failure to comply could result in death or serious injury.

M1579

Clean the cooling system to remove rust, sludge, and other foreign material by using a coolant system cleaning solvent. In severe cases, pressure flushing may be required. A pulsating or reverse flow flushing will more effectively loosen and remove foreign material than a steady flushing in normal direction of coolant flow. If pressure flushing is to be used, always remove the thermostat and make sure the head bolts are tightened properly.

COOLANT

The coolant is a permanent type ethylene-glycol base antifreeze and should be used all year.

Drain and flush the cooling system every twelve months and replace the coolant with fresh antifreeze and pure water.

After the coolant has been drained from the radiator and block, flush the system by placing a water hose in the radiator filler neck. With the drain open and the system full of water, start the engine and run it until the water flowing from the drain is clear. Stop the engine and allow the system to drain, then replace the coolant with new 50/50 mixture antifreeze and pure water.

RADIATOR CAP

The radiator cap acts to pressurize the cooling system, as a pressure relief valve and also acts as a vent valve. The pressure valve permits a limited pressure buildup in the cooling system as the coolant heats up. This increased pressure increases the boiling point of the coolant. If excess pressure builds up in the system, the pressure relief valve will open until the pressure returns to the proper level, 90 kPa (13 psi).

When the engine is shut off and the coolant cools, a vacuum condition is created in the system. A vent valve in the radiator cap opens to permit outside air pressure to enter the system when this condition exists.

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SECTION 10 - ENGINE

BOOK 1 - 84260811

Chapter 1 - Engine (Continued)

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INTERNATIONAL SYMBOLS

As a guide to the operation of your tractor, various universal symbols have been utilized on the instruments, controls, switches, and fuse box. The symbols are shown below with an indication of their meaning.


Thermostart starting aid


Alternator charge


Fuel level


Automatic Fuel shut-off


Engine speed (rev/min x 100)


Hours recorded


Engine oil pressure


Engine coolant temperature


Coolant level


Tractor lights


Headlamp main beam


Headlamp dipped beam


Work lamps

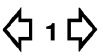

Stop lamps


Horn

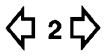

Radio

KAM
Keep alive memory


Turn signals



Turn signals -one trailer



Turn signals -two trailers


Front wind-screen wash/wipe


Rear wind-screen wash/wipe


Heater temp-erature control


Heater fan


Air conditioner


Air filter blocked


Parking brake


Brake fluid level


Trailer brake


Roof beacon


Warning! Corrosive substance


P.T.O.

N
Transmission in neutral


Creeper gears


Slow or low setting


Fast or high setting


Ground speed


Differential lock


Rear axle oil tem-perature


Transmission oil pressure


FWD engaged


FWD disengaged

Warning!

Hazard warning lights

Variable control

Pressurised! Open carefully

Position Control

Draft Control

Accessory socket

Implement socket

%age slip

Hitch raise (rear)

Hitch lower (rear)

Hitch height limit (rear)

Hitch height limit (front)

Hitch disabled

Hydraulic and transmission filters

Remote valve extend

Remote valve retract

Remote valve float

Malfunction! See Operator's Manual

Malfunction! (alternative symbol)

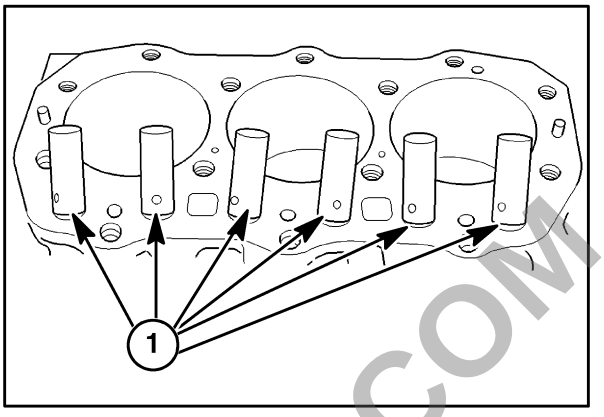
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VALVE TAPPET

Removal

Remove the valve tappets, 1, from the machined bore in the cylinder block.

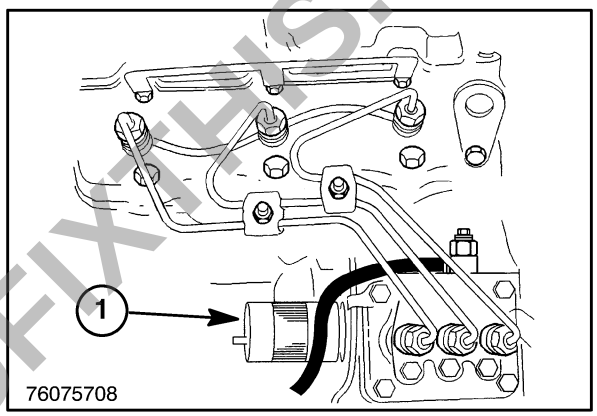


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FUEL SHUTOFF SOLENOID

Removal

Remove the wire connector and unscrew the fuel shutoff solenoid, 1.

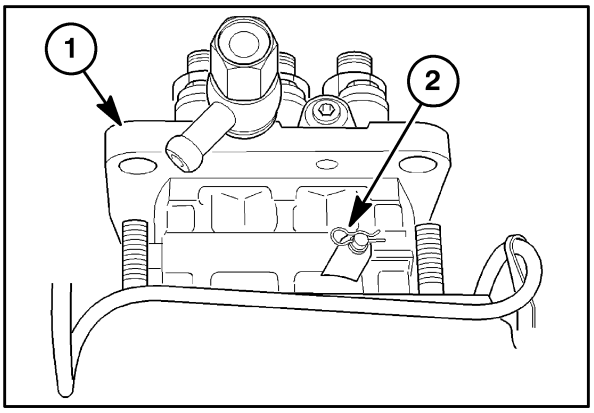


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TIMING GEAR COVER

Removal

1. Drain the engine crankcase oil.
2. Remove the crankshaft pulley.
3. Disconnect the throttle control rod at the injection pump.
4. Loosen the two M8x20 cap screws and two M8 nuts and raise the injection pump, 1, enough to remove the hair pin cotter pin, 2, and separate the governor link from the control rack. Remove the injection pump.



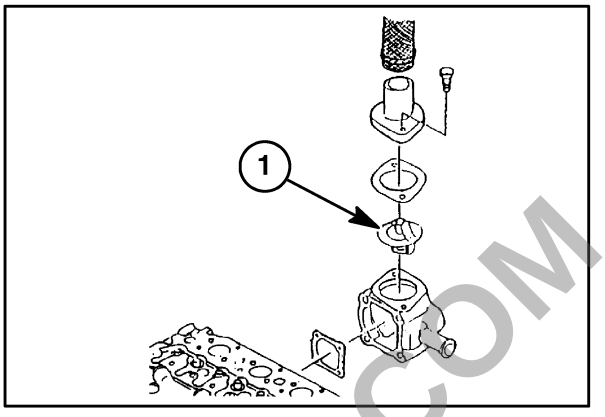
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THERMOSTAT

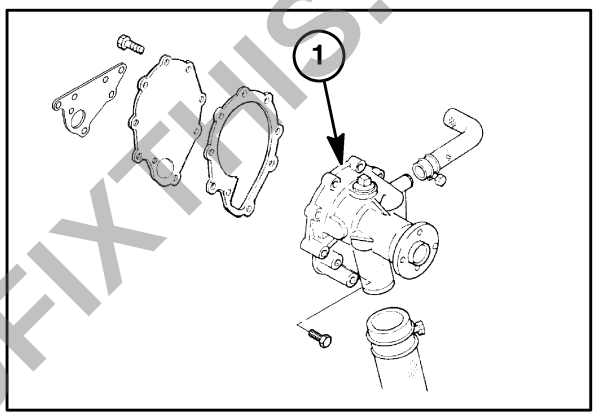
The thermostat, 1, is located between the coolant outlet on the engine and the radiator. In this position the thermostat is able to sense the coolant temperature in the engine and regulate the flow of coolant to the radiator. When the engine is cold, only a small amount of coolant flows to the radiator through the thermostat bypass. As the engine warms up, the thermostat opens to allow sufficient coolant flow to the radiator to maintain a constant engine temperature.



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WATER PUMP

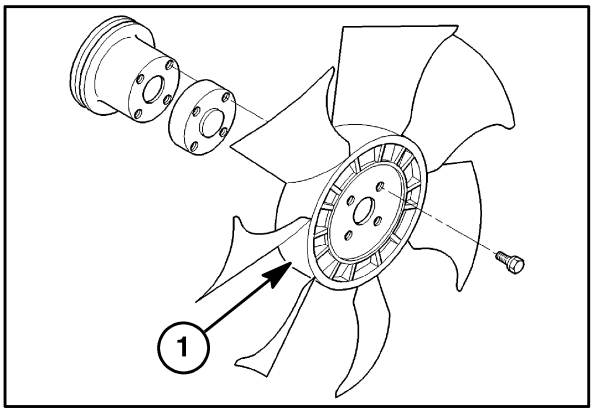
The water pump, 1, is an impeller attached to a shaft which is belt driven by the engine crankshaft. The impeller circulates water by centrifugal force. Coolant entering the pump housing from the radiator through the lower hose is thrown outward against the housing with sufficient force to cause a circulating action.



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COOLING FAN

A seven-blade cooling fan, 1, is belt driven by the engine crankshaft and is mounted on the water pump shaft. The cooling fan is positioned behind the radiator to draw air over the radiator cooling fins. To increase and concentrate the volume of air flowing through the radiator, a shroud is positioned around the fan.



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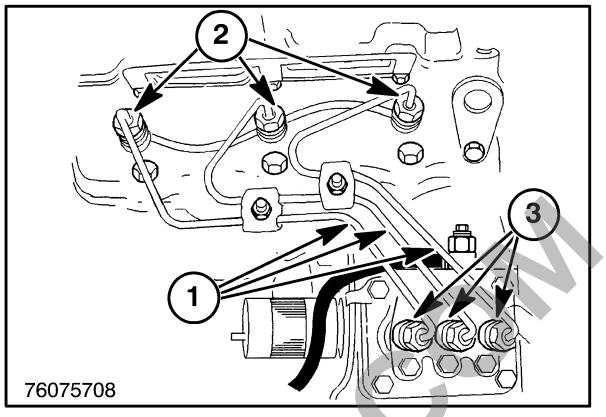
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INJECTION PUMP

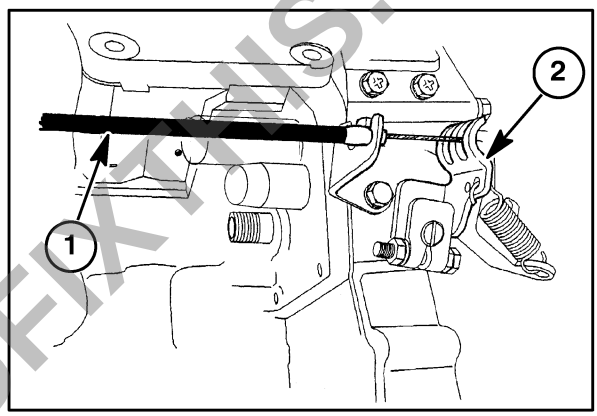
Removal

1. Remove the fuel injection lines, 1, by loosening nuts, 2, on the injectors and nuts, 3, on the injector pumps. Cap all openings to prevent contamination.



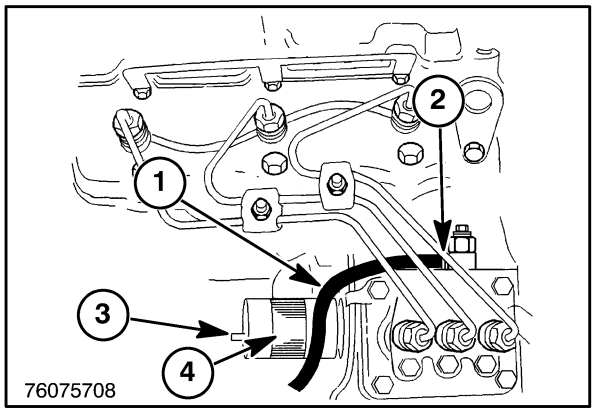
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2. Disconnect the throttle control cable, 1, from the timing gear cover lever, 2.



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3. Disconnect the fuel inlet line, 1, on the injection pump by loosening hose clamp, 2. Disconnect the engine fuel stop solenoid lead, 3, then unscrew the solenoid, 4, from the fuel injection pump housing.



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SECTION 21 – GEAR TRANSMISSION

Chapter 1 – Gear Transmission 9 x 3

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GEAR REDUCTION – DROP BOX

Inspection and Repair

1. Wash all parts in a suitable solvent and air dry.
2. Inspect the gears for excessive wear or damage. Replace gears that show excessive wear. See " Assembly," for gear backlash checks.
3. Inspect the splines on the pinion gears, idler shaft, and axle shaft for excess wear or damage.
4. Check the bearings for wear or roughness. Rotate the bearings by hand and replace bearing as required.
5. On assembly, check the bevel gear and pinion backlash. See "Gear Reduction – Drop Box Assembly," discussed later in this section.

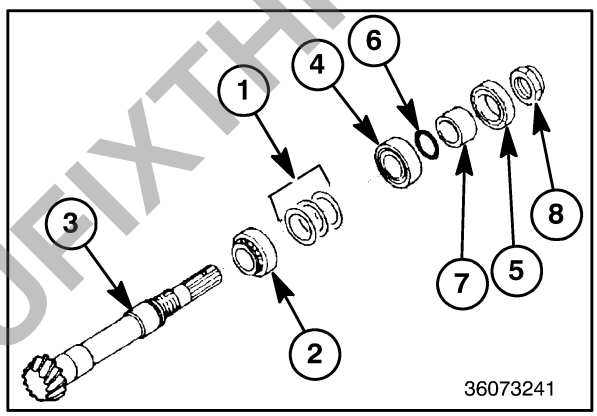
DRIVE PINION

Assembly

1. Install the shims, 1, and front pinion bearing, 2, on the drive pinion, 3.

NOTICE: *Shim sizes are: 0.1 mm (0.004 in), 0.2 mm (0.008 in), and 0.5 mm (0.020 in).*

2. Insert the pinion in place in the differential housing.
3. Install the outer bearing, 4, on the pinion shaft in the differential housing.
4. Using a suitable driver, install the oil seal, 5, O-ring, 6, and collar, 7, on the shaft.



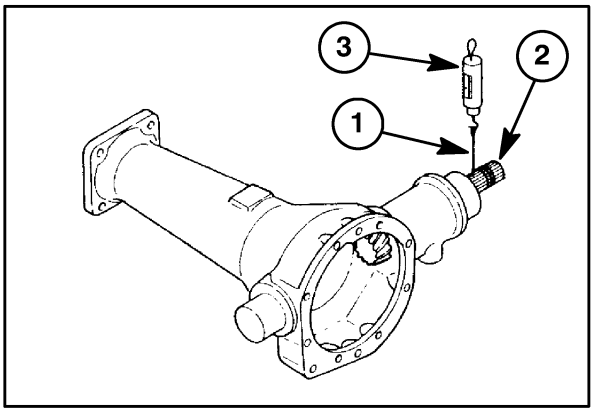
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1. Shims
2. Tapered Roller Bearing
3. FWD Pinion Shaft
4. Tapered Roller Bearing
5. Oil Seal
6. O-ring
7. Collar
8. Locknut

5. Install the pinion locknut (8, figure 13), and tighten to obtain the correct bearing pre-load as follows:

   Wrap a strong cord, 1, around the pinion shaft, 2. Using a pull scale, 3, measure the pounds pull to rotate the pinion shaft.

   Tighten or loosen the locknut as necessary to obtain a pre-load 128 – 166 N (28.7 – 37.4 lb) of pull.



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OVERHAUL – POWER TAKE-OFF

POWER TAKE-OFF

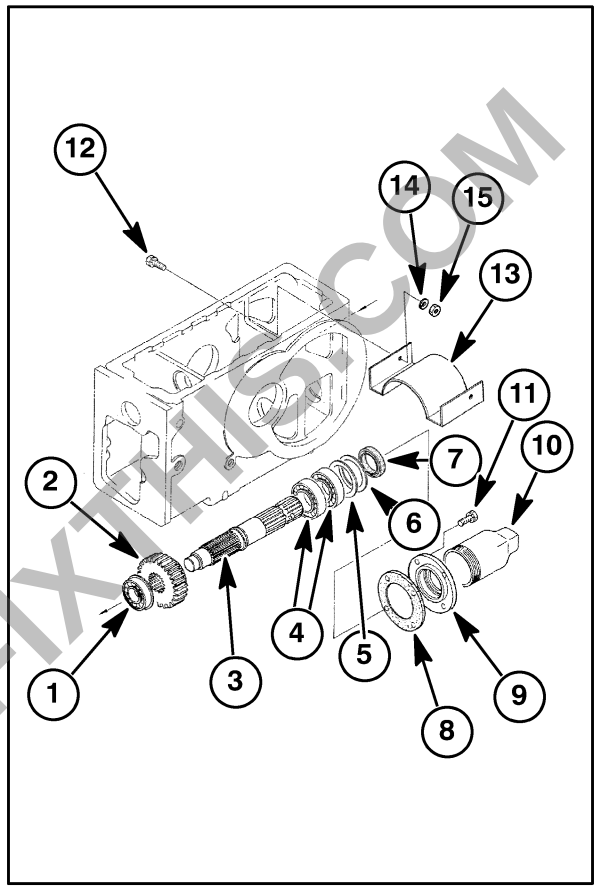
Removal

Separate the tractor between the transmission and the rear axle housing. See “Separating the Tractor,” in Section 27.

OUTPUT SHAFT

Removal

1. Remove the two M8 nuts, 15, two M8 lock washers, 14, and two M8x16 cap screws, 12, and remove the bracket, 13.
2. Remove the four M8x20 cap screws, 11, securing the rear cover, 9, and remove the rear cover, 9, cap, 10, gasket, 8, and oil seal, 7.
3. Drive the PTO output shaft, 3, out the rear while supporting the sliding gear, 2, and bearing, 1.
4. Remove the sliding gear, 2, and bearing, 1, through the top of the case.
5. Remove the shims, 5 and 6, and bearings, 4, from the shaft.



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1. Ball Bearing
2. Sliding Gear – 20T: 9x3 2WD, 21T: 9x3 4WD and HST
3. PTO Output Shaft
4. Ball Bearing
5. Shim – 0.2 mm (0.008 in) As Required
6. Shim – 0.5 mm (0.020 in) As Required
7. Oil Seal
8. Gasket
9. Rear Cover
10. Cap
11. Cap Screw, M8x20
12. Cap Screw, M8x16
13. Bracket
14. Lock Washer, M8
15. Nut, M8

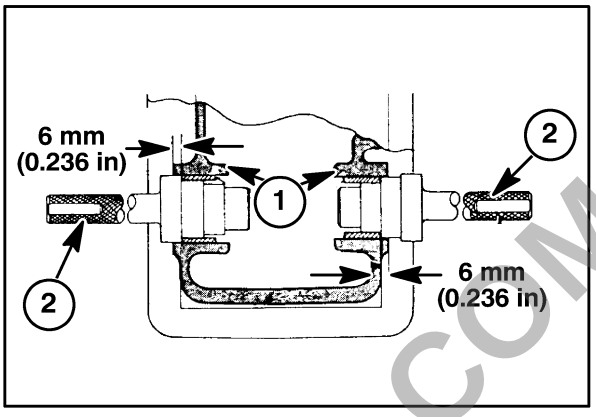
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Inspection and Repair

1. Check the piston and cylinder for excessive wear or damage. Replace if necessary.
2. Check the cross shaft bushings, 1, for excessive wear or damage. Replace the bushings if necessary using a suitable driver, 2.

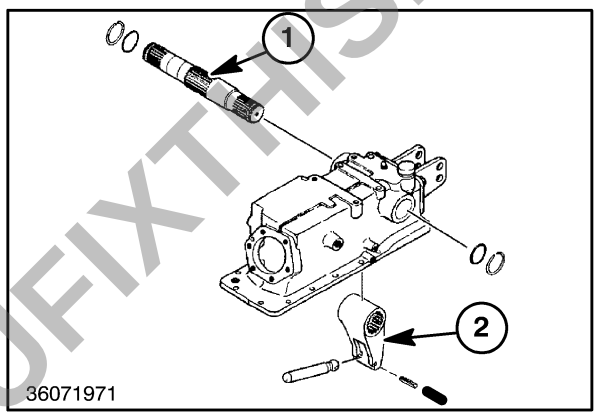
   NOTICE: *Be sure to install the bushings to the correct depth as shown.*



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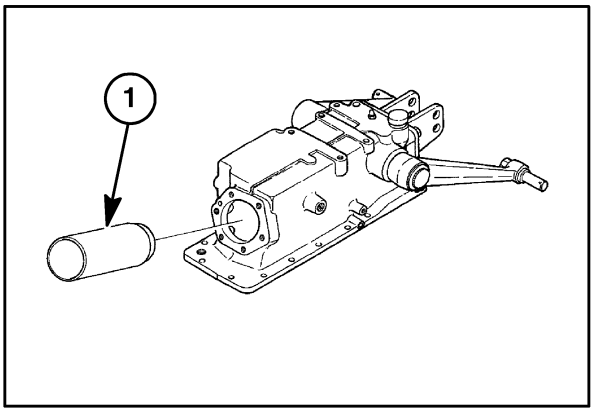
Assembly

1. Clean all parts in a suitable solvent and air dry.
2. Apply clean hydraulic fluid to all parts, including O-rings and seals, during assembly.
3. Install the cross shaft, 1, in the cover while aligning the ram arm, 2, to the scribe marks made during disassembly.



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4. Install the cylinder liner, 1, in the lift cover housing. Be sure to position the piston rod inside the liner during installation.



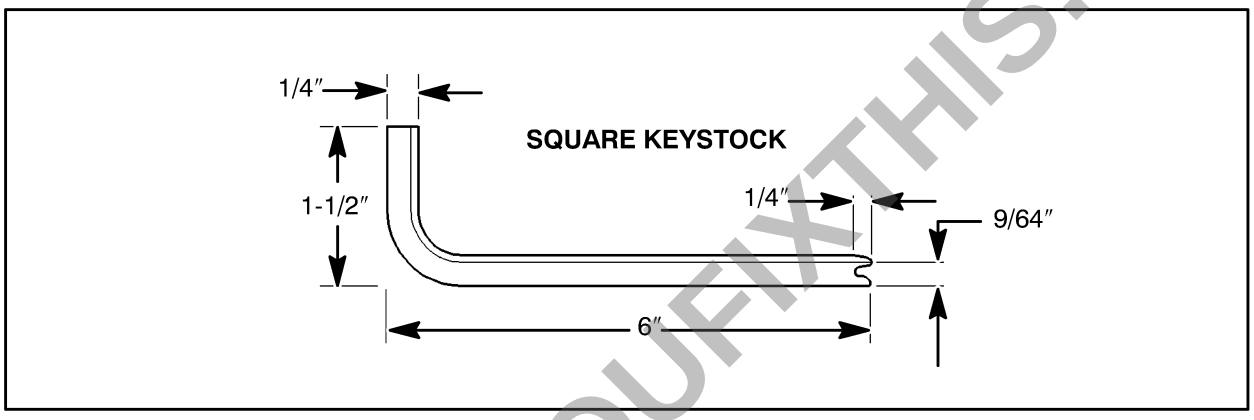
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SPECIAL TOOLS

	Tool No.
Gauge 0 - 3000 psi	OEM 1462
Hose	Procure Locally
Tee Fitting	FNH11451
Male Plug	FNH00009
Female Cap	FNH00010



1

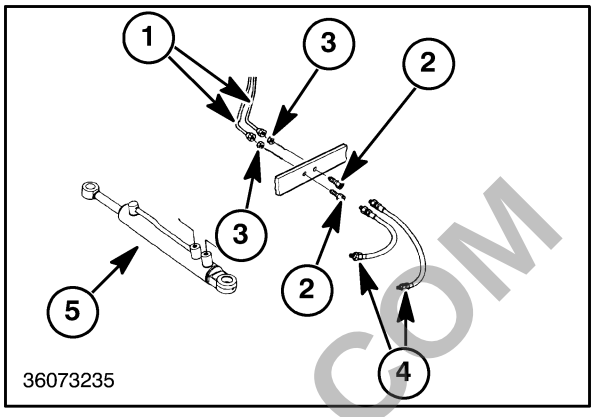
NOTICE: *Manufacture tool according to dimensions above.*

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Removal

1. Disconnect the oil tubes, 1, from the adapter fittings, 2.
2. Remove the nuts, 3, from the adapters, 2.
3. Remove the oil hoses, 4, from the power steering cylinder, 5.
4. Remove the adapters, 2, from the oil hoses, 4.

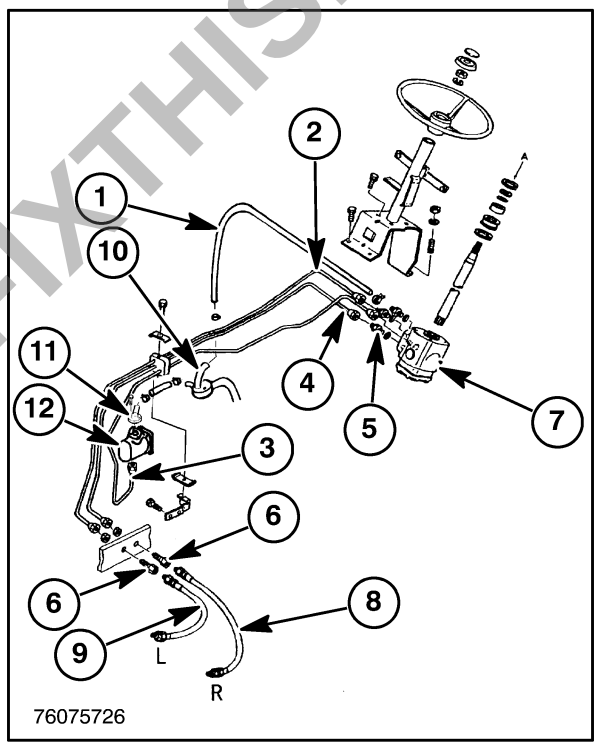


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Inspection

1. Inspect the oil hoses, 8 and 9, for cracks, leaks, or other damage.
2. If hoses need to be replaced, apply thread sealant to new hose threads and tighten.

1. Oil hose: T
2. Oil piping: L
3. Oil piping: P
4. Oil piping: R
5. Adapter (4)
6. Adapter (2)
7. Steering case
8. Oil hose: R
9. Oil hose: L
10. Suction pipe
11. Flange
12. Oil pump



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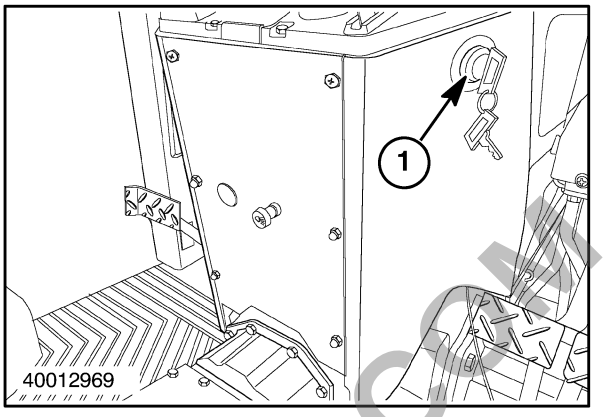
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KEY SWITCH

(All T1510 and T1520 On and Above serial numbers Z8NGK1151 and Z8NGL1146)

Description

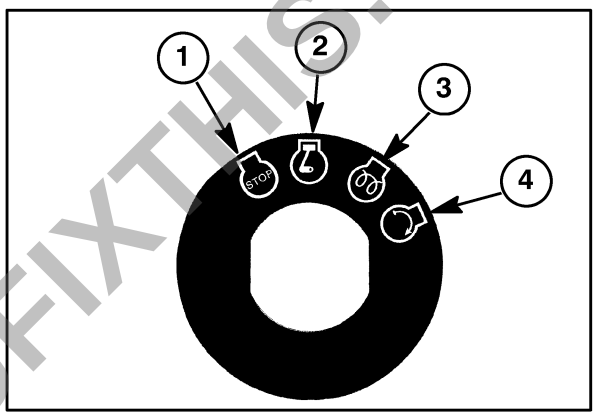
The key start switch, 1, is located on the right side panel. The key switch has four key-operated positions; STOP, AC/RUN, HEAT, and START. Turning the key from the STOP position will align the electrical contacts within the key switch. With the contacts aligned, the circuit is closed and battery current will flow through the circuit.



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1. STOP POSITION

In the STOP position, 1, there is no battery power supplied to electrical circuits and the key may be removed from the key switch to prevent unauthorized use of the tractor. The STOP position also stops the tractor engine, when running.



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2. AC/RUN POSITION

When the key switch is rotated clockwise to the AC/RUN position, 2, battery power is supplied to operate the electrical accessories without the engine running. The switch will also be in this position while the tractor is running.

3. HEAT POSITION

To pre-heat the engine, turn the key switch to the “HEAT” position, 3. The cold start indicator light goes out after approximately four seconds. The glow plugs heat the precombustion chambers during this time, and the engine will start.

NOTE: *The preheat is auto-timed, when the indicator light goes off, the power to the glow plugs is also removed.*

4. START POSITION

NOTE: *The key switch is spring-loaded to return to the AC/RUN position, 2, when released from the START position, 4.*

When the key switch is turned clockwise to the START position, 4, power is supplied to the starter motor to crank and start the engine. This position also provides current to the engine glow plugs to aid in starting the tractor engine.

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FUEL LEVEL CIRCUIT

1. Current flows from the positive (+) battery terminal, through the positive (+) battery cable, to the engine starter motor.

2. From the starter motor, current flows through the 40 amp main fuse wire and through a connector to terminal 30 of the key switch.

3. When the key switch is in the “AC/RUN” position, current crosses from terminal 30 to the “AC” terminal of the key switch. From the “AC” terminal of the key switch, current passes through the 10-amp fuse within the fuse block, to reach terminal 14 of the instrument panel.

4. Current flows from terminal 14 of the instrument panel and reaches the fuel gauge. The ground path for the fuel gauge travels from terminal 3 of the instrument panel to the fuel level sender.

5. The ground path for the fuel level gauge exists the instrument panel at terminal 15 and is then directed to the ground terminal at the engine cylinder head.

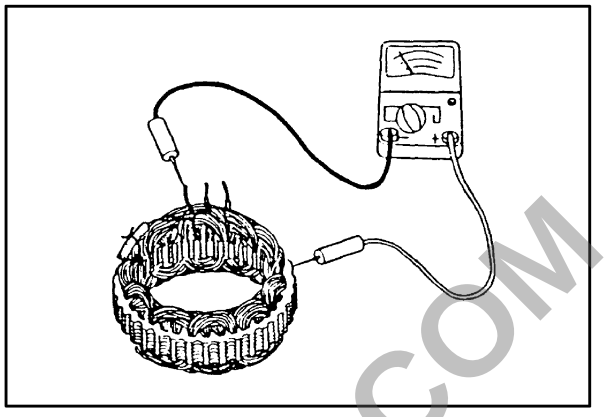
6. The needle within the fuel level gauge is controlled by variable resistance to ground. The ground path exists the fuel level gauge and terminal 3 of the instrument panel to travel to the fuel level sender. At the sender, the resistance to ground changes as the fuel level in the tank rises or lowers, translating into movement of the gauge needle.

7. A constant ground to temperature gauge is provided by terminal 15 of the instrument panel.

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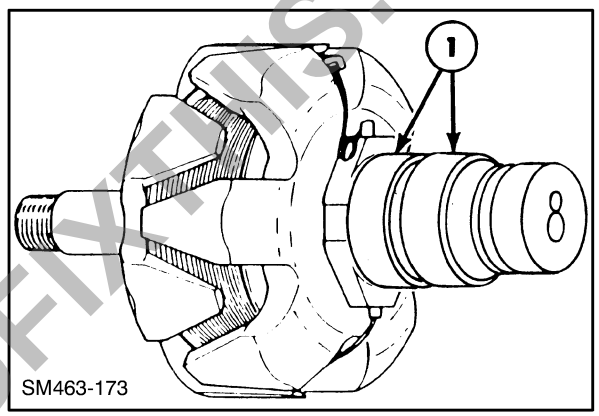
4. Using an ohmmeter, touch one ohmmeter test probe to the stator coil and the other test probe to the stator core.
5. Observe the ohmmeter. Resistance should be high, indicating no continuity between the coil and core. If there is continuity, the stator is defective and needs replaced.



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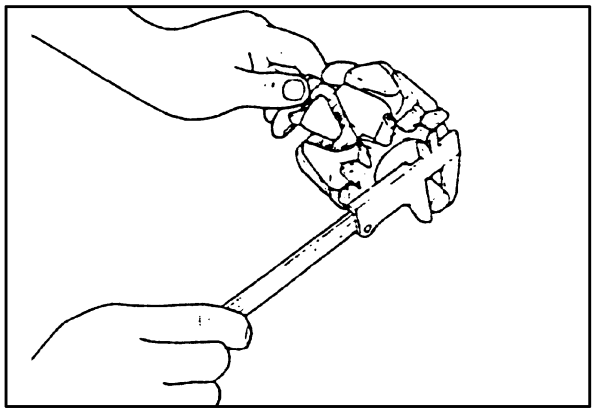
Rotor

1. Inspect the rotor brush contacts, 1, for pitting, roughness, and dirt. If necessary, use # 600 grit fine sandpaper to clean dirt off of the contacts. If the contacts are pitted or damaged excessively, replace the rotor.



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2. Use a suitable measuring device to determine the outer diameter of each brush contact. The minimum outer diameter of the brush contacts is 22.1 mm (0.871 in.).



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